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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Alex Karlsson-Parra

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EXAMINER

JUEDES, AMY E

ART UNIT

PAPER NUMBER

1644

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/516,915	Applicant(s) KARLSSON-PARRA ET AL.	
	Examiner Amy E. Juedes, Ph.D.	Art Unit 1644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 13 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1644

DETAILED ACTION

1. Applicant's amendment and remarks, filed 6/13/06, are acknowledged.

Claims 1-15 have been cancelled.

Claims 16-35 have been added.

Claims 16-35 are pending and are under examination.

2. The objection to the claims for informalities is withdrawn in view of Applicant's amendment.

3. The previous grounds of rejection are withdrawn, in view of Applicant's cancellation of the original claims. It is noted that the arguments relevant to the new grounds of rejection will be addressed below.

4. The following are new grounds of rejection necessitated by Applicant's amendment.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A) Claim 16 and 29 are indefinite since it is unclear how a nucleic acid molecule encoding neuraminidase can, itself, remove sialic acid from the cell surface.

B) Claims 23 and 32 recite the limitation "the human tumor cell line" in line 2. There is insufficient antecedent basis for this limitation in the claim, or in independent claims 16 or 29. Therefore, it is not clear how the human tumor cell line relates to the claimed method

It is noted that Applicant argues that the amendment to the claims to replace "gene" with "nucleic acid" obviates the rejection.

Art Unit: 1644

While a nucleic acid molecule might be capable of encoding neuraminidase protein, which can remove sialic acid, it is unclear how a nucleic acid can remove sialic acid from the cell surface, as claimed.

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 16-35 are rejected under 35 U.S.C. 112, first paragraph, as the specification does not contain a written description of the claimed invention, in that the disclosure does not reasonably convey to one skilled in the relevant art that the inventor(s) had possession of the claimed invention at the time the application was filed. This is a new matter rejection.

The specification and the claims as originally filed do not provide support for the invention as now claimed, specifically:

A) A method comprising modifying the APC by fusing the APC with "a cell" or a "tumor cell" (Claims 16, 22, and dependent claims 17-21 and 23-28).

B) A method for the production of "an antigen specific immunogenic composition" (Claim 16 and dependent claims 17-28).

C) A method wherein the antigen or cell lysate is "obtained from a human tumor cell line", "breast cancer cell" or "prostate cancer cell" (claims 21, 23, 27, 31-32, 35 and dependent claims 28).

D) A method wherein the antigen is "PSA" or "CA-125" (claim 25 and 34).

E) A method wherein the antigen is "obtained from a cell lysate" (claim 26).

F) A method for producing a "composition" (claim 29 and dependent claims 30-35)

Art Unit: 1644

In the remarks filed 6/13/06, Applicant indicates that support for the new limitations can be found on pg. 5-6, pg. 10, pg. 14, and pg. 16-17.

A review of the specification fails to reveal support for the new limitations.

Regarding A), at page 10, the specification discloses that the antigen may be incorporated by fusion with an allogeneic tumor cell. However, this does not provide adequate support for the broader scope of the instant claims which encompass fusing with "a cell" or "a tumor cell".

Regarding B), it is noted that the instant specification discloses a method of producing a cellular allogeneic vaccine. The specification on page 6 further discloses that said vaccine embraces any reagent, cell or compound capable of eliciting an antigen-specific immune response in a subject. However, the instant specification does not disclose a method for the production of "an antigen specific immunogenic composition", as now claimed.

Regarding C), at page 16, the specification discloses using human tumor cell lines. However, the instant specification does not disclose using antigens "obtained" from human tumor cell lines. Additionally, the specification on page 17 discloses that monocytes may be pulsed with tumor cell lysates (100-200 microgram cancer cell protein/mL for 3 hours) from tumor cell lines including breast cancer and prostate cancer cells. However, this specific example does not provide adequate support for the more generic claims of the instant application, which involve "modifying" any "APC".

Regarding D), at page 17, the specification discloses that monocytes may be pulsed with either soluble tumor proteins (1-10 mg/ml- for 3 hours) including prostate soluble antigen (PSA) and cancer antigen (CA)-125. However, this specific example does not provide adequate support for the more generic claims of the instant application, which involve "modifying" any "APC".

Regarding E), on page 10, the specification discloses using a tumor cell lysate. However, this does not provide adequate support for any "cell lysate", as now claimed.

Art Unit: 1644

Regarding F), it is noted that the instant specification discloses a method of producing a cellular allogeneic vaccine. The specification on page 6 further discloses that said vaccine embraces any reagent, cell or compound capable of eliciting an antigen-specific immune response in a subject. However, the instant specification does not disclose a method for the production of "composition", as now claimed.

8. Claims 16-35 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for:

a method comprising using neuraminidase, a neuraminidase-producing virus or bacteria, or an antibody against CD43 to remove sialic acid,

does not reasonably provide enablement for:

a method comprising using a nucleic acid coding for neuraminidase to remove sialic acid.

The specification disclosure is insufficient to enable one skilled in the art to practice the invention as claimed without an undue amount of experimentation. Undue experimentation must be considered in light of factors including: the breadth of the claims, the nature of the invention, the state of the prior art, the level of one of ordinary skill in the art, the level of predictability of the art, the amount of direction provided by the inventor, the existence of working examples, and the quantity of experimentation needed to make or use the invention, *in re Wands*, 858 F.2d at 737, 8 USPQ2d at 1404 (Fed. Cir. 1988).

"The amount of guidance or direction needed to enable the invention is inversely related to the amount of knowledge in the state of the art as well as the predictability in the art." *In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970). The "amount of guidance or direction" refers to that information in the application, as originally filed, that teaches exactly how to make or use the invention. The more that is known in the prior art about the nature of the invention, how to make, and how to use the invention, and the more predictable the art is, the less information needs to be explicitly stated in the specification. In contrast, if little is known in the prior art about the nature of the invention and the art is unpredictable, the specification would need more detail as to how to make and use the invention in order to be enabling (MPEP 2164.03)." The MPEP further states that physiological activity can be considered inherently unpredictable.

Art Unit: 1644

The specification provides insufficient guidance to enable claims drawn to the method as broadly claimed. Note that the method encompasses the use a nucleic acid encoding neuraminidase to remove sialic acid. Neuraminidase protein or antibodies to CD43 are well documented in the art as agents capable of removing CD43/sialic acid (see Fanales-Belasio, for example). However, neither the instant specification, nor any art of record demonstrates that a nucleic acid molecule, by itself, is capable of removing sialic acid, as instantly claimed. Accordingly, the method as broadly claimed must be considered highly unpredictable. Given said unpredictability, the method of the instant claims must be considered to require undue experimentation.

It is noted that Applicant argues that the rejection should be withdrawn since step C) in independent claims 16 and 29 recites a step for treating the APC with an agent capable of removing sialic acid on the surface of the APC.

However, as set forth above, the method encompasses using a nucleic acid molecule as the agent for removing sialic acid. While a nucleic acid molecule might be capable of encoding a protein that can remove sialic acid, it is not itself capable of removing sialic acid, as claimed.

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 16 is rejected under 35 U.S.C. 102(b) as being anticipated by Weiss et al., 1966.

Weiss et al. teaches a method comprising isolating monocytes from the peripheral blood of an individual, followed by treating the monocytes with neuraminidase and pulsing with plastic particles in calf serum (see pg. 1304 in particular). It is noted that both calf serum can be considered a soluble antigen.

Art Unit: 1644

It is noted that Applicant argues that since claim 16 incorporates the subject matter of previously pending claim 5, the reference does not anticipate the new claims.

However, it is noted that previously pending claim 5, as being dependent from claim 4, required a cancer antigen. In contrast, claim 16 is not limited to cancer antigens, but includes any soluble antigen. As set forth above, Weiss et al. teach "pulsing" the monocytes with calf serum, which can be considered a soluble antigen.

11. Claims 16-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Fanales-Belasio et al., 1997.

Fanales-Belasio et al. teach a method comprising differentiating dendritic cells from peripheral blood monocytes of healthy individuals, followed by treating with anti-CD43 or neuraminidase to remove sialic acid (see materials and methods and Fig. 6, in particular). Furthermore, Fanales-Belasio et al. teach pulsing said treated dendritic cells with an antigen followed by culturing with T cells in complete RPMI, i.e. a suitable medium (see pg. 2204 and Fig. 8 in particular). In addition, Fanales-Belasio et al. teach that anti-CD43/neuraminidase treated dendritic cells have a superior ability to stimulate T cells, and that this property may be exploited to improve their adjuvant activity in tumor immunotherapy (i.e. as a cellular vaccine), see pg. 2210 in particular.

It is noted that Applicant argues that since claim 16 incorporates the subject matter of previously pending claim 5, the reference does not anticipate the new claims.

However, it is noted that previously pending claim 5, as being dependent from claim 4, required a cancer antigen. In contrast, claim 16 is not limited to cancer antigens, but includes any soluble antigen. Fanales-Belasio et al. teach pulsing with soluble antigens (for example, tetanus toxoid, see pg. 2204).

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the

Art Unit: 1644

differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 18, 24, 26-27, 29, 33, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fanales-Belasio et al., 1997, in view of Fields et al, 1998.

The teachings of Fanales-Belasio are described above. In addition, Fanales-Belasio teaches that the anti-CD43/neuraminidase treated dendritic cells have a superior ability to stimulate T cells (see Figs. 6-8 in particular), and that this property may be exploited to improve the adjuvant activity of dendritic cells in tumor immunotherapy (see pg. 2210 in particular).

Fanales-Belasio does not teach pulsing treated dendritic cells with a cancer antigen or tumor cell lysate.

Fields teaches that dendritic cells can be pulsed with tumor cell lysates, including from a mammary carcinoma (i.e. a breast cancer cell), see pg. 9483 in particular. Additionally, Fields teaches that said tumor lysate pulsed dendritic cells can prime tumor specific T cells in vivo, resulting in decreased tumor burden (see Fig. 6-7 in particular).

Therefore, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to pulse the neuraminidase/anti-CD43 treated dendritic cells taught by Fanales-Belasio with tumor lysates, as taught by Fields. The ordinary artisan at the time the invention was made would have been motivated to do so, and have a reasonable expectation of success, since Fields teaches that tumor lysate pulsed dendritic cells prime tumor specific T cells and can reduce tumor burden, and Fanales-Belasio et al. teach that neuraminidase/CD43 treatment enhances the ability of dendritic cells to stimulate T cells.

It is noted that Applicant argues that the cited references do not suggest that the cells taught by Fanales-Belasio et al. can be successfully modified and yet still maintain desirable properties.

Art Unit: 1644

However, Fanales-Belasio et al. teach the neuraminidase treated cells can be "modified" by pulsing with an antigen (tetanus toxoid), and therefore the ordinary artisan would have had a reasonable expectation of success in performing the same method with other antigens (i.e. tumor antigens).

Applicant further argues that the ordinary artisan would lack the motivation to combine the teachings of the two publications, since neither publication teaches a cell that expresses a tumor antigen while at the same time has been treated with an agent capable of removing sialic acid.

It is noted that Applicant is essentially arguing that neither reference, by itself, teaches all the limitations of the instant claims. However, it is the combination of the two references that makes the instant invention obvious. As noted above, Fanales-Belasio teaches treating dendritic cells with an agent capable of removing sialic acid, and Fields et al. teach pulsing dendritic cells with tumor lysate. Therefore, the combination of Fanales-Belasio et al. and Fields et al. teach all the limitation of the instant claims. Furthermore, the ordinary artisan would have been motivated to combine the two references for the reasons given above.

14. Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fanales-Belasio et al., 1997, in view of Rees et al., 1991.

The teachings of Fanales-Belasio are described above. In addition, Fanales-Belasio teaches that the anti-CD43/neuraminidase treated dendritic cells have a superior ability to stimulate T cells (see Figs. 6-8 in particular), and that this property may be exploited to improve the adjuvant activity of dendritic cells in tumor immunotherapy (see pg. 2210 in particular).

Fanales-Belasio does not teach exposing the APCs to hyperthermia.

Rees teaches exposing APCs to heat stress (i.e. hyperthermia) of 44 degrees Celsius for 20 min (see pg. 387 in particular). Furthermore Rees teaches that the heat stressed APCs upregulate MHC-II and are more potent at stimulating T cells (see Fig. 1-3, in particular).

Art Unit: 1644

Therefore, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to make a APC cellular vaccine, as taught by Fanales-Belasio, including the step of exposing the APC to hyperthermia, as taught by Rees. Furthermore, it would have been obvious to optimize the temperature and time of said hyperthermia. The ordinary artisan at the time the invention was made would have been motivated to combine the steps of treating with neuraminidase and heat stress to obtain an APC with enhanced ability to stimulate T cells than either treatment alone, since Fanales-Belasio teaches that T cell stimulatory capacity of APCs can be exploited for tumor immunotherapy. Furthermore, the ordinary artisan would have had a reasonable expectation of success, since the neuraminidase treatment taught by Fanales-Belasio, and the heat stress treatment taught Rees both result in an APC with a more potent ability to stimulate T cells.

It is noted that Applicant argues that the cited references do not suggest that the cells taught by Fanales-Belasio et al. can be successfully modified and yet still maintain desirable properties.

However, both Fanales-Belasio et al. and Rees et al. teach that the treated APCs have a more potent ability to stimulate T cells. Therefore, the ordinary artisan would have had a reasonable expectation of success that performing both treatments would also result in a APC with "desirable properties", i.e. having a potent ability to stimulate T cells.

Applicant further argues that while Rees et al. may teach exposing antigen presenting cells to heat stress, there is no recognition of providing an APC with the additional properties recited in the claims.

It is noted that Applicant is essentially arguing that neither reference, by itself, teaches all the limitations of the instant claims. However, it is the combination of the two references that makes the instant invention obvious. As noted above, Fanales-Belasio teaches treating dendritic cells with an agent capable of removing sialic acid and pulsing with an antigen, and Rees et al. teach exposing APCs to heat stress. Therefore, the combination of Fanales-Belasio et al. and Rees et al. teach all the limitation of the instant claims. Furthermore, as noted above, the ordinary artisan would have been motivated to combine the steps of treating with

Art Unit: 1644

neuraminidase and heat stress to obtain an APC with enhanced ability to stimulate T cells than either treatment alone, since Fanales-Belasio teaches that T cell stimulatory capacity of APCs can be exploited for tumor immunotherapy.

15. Claims 16-18, 21-22, 24, 26-29, 31, 33, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nouri-Shirazi et al., 2000, in view of Fanales-Belasio et al., 1997.

Nouri-Shirazi et al. teach a method for the production of a dendritic cell vaccine comprising isolating dendritic cells from a subject and exposing the dendritic cells to tumor antigen, including human tumor antigen (see pg. 7-8 in particular). Nouri-Shirazi et al. further teach a variety of methods for delivery of the tumor antigen to the dendritic cells, including using tumor cell lines, loading with tumor lysates, using peptide or protein tumor antigen, transfecting with genes encoding tumor antigens, and fusing with tumor cells (see pg. 8-9, in particular). Nouri-Shirazi et al. also teach isolation of monocytes as the initial antigen presenting cell (see pg. 7 in particular). Nouri-Shirazi et al. further teach that the goal of tumor vaccination with dendritic cells is presentation of tumor antigen to T cells leading to tumor elimination (see pg. 5 in particular).

Nouri-Shirazi et al. do not teach treating the dendritic cell with an agent capable of removing sialic acid from the surface.

Fanales-Belasio et al. teach a method comprising differentiating dendritic cells from peripheral blood monocytes of healthy individuals, followed by treating with anti-CD43 or neuraminidase to remove sialic acid (see materials and methods and Fig. 6, in particular). Fanales-Belasio et al. also teach that the anti-CD43/neuraminidase treated dendritic cells have a superior ability to stimulate T cells (see Figs. 6-8 in particular), and that this property may be exploited to improve the adjuvant activity of dendritic cells in tumor immunotherapy (see pg. 2210 in particular).

Therefore, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to further treat the dendritic cells with an agent capable of removing sialic acid, as taught by Fanales-Belasio et al., in the method of producing a dendritic cell vaccine taught by

Art Unit: 1644

Nouri-Shirazi et al. The ordinary artisan at the time the invention was made would have been motivated to do so, and have a reasonable expectation of success, since Fanales-Belasio et al. teach that neuraminidase/CD43 treated dendritic cells are superior at stimulating T cells, and that this property may be exploited to improve the adjuvant activity of dendritic cells in tumor immunotherapy.

16. Claims 23, 25, 32, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nouri-Shirazi et al. and Fanales-Belasio et al., as applied to claims 16-18, 21-23, 24, 26-29, 31-33, and 35 above, and further in view of Rees et. al.

The combined teachings of Nouri-Shirazi et al. and Fanales-Belasio et al. are discussed above.

They do not teach PSA as the tumor antigen.

Tjoa et al. teach PSA is a human prostate cancer specific antigen that may be used as a target for specific immunotherapy (see pg. 88, in particular).

Therefore, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to use PSA as the tumor antigen, as taught by Tjoa et al., in the method of making a vaccine taught by Nouri-Shirazi et al. and Fanales-Belasio et al. The ordinary artisan at the time the invention was made would have been motivated to do so, since Tjoa et al. teach that PSA is a human prostate cancer specific antigen that may be used as a target for specific immunotherapy, and Nouri-Shirazi et al. teach that tumor antigen loaded dendritic cells can be used to treat human tumors. It is noted that claims 23 and 32 are included, since Tjoa et al. teach using PSA (i.e. a human prostate cancer cell antigen). As the instant method is drawn to a method of making an APC, and not to a method of making a cancer antigen, the way in which the antigen is obtained (i.e. from a prostate cancer cell line) does not carry any patentable weight in the absence of evidence of a structural difference of the antigen.

17. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nouri-Shirazi et al. and Fanales-Belasio et al., as applied to claims 16-18, 21-23, 24, 26-29, 31-33, and 35 above, and further in view of Rees et. al.

Art Unit: 1644

The combined teachings of Nouri-Shirazi et al. and Fanales-Belasio et al. are discussed above.

They do not teach exposing the cells to hyperthermia.

Rees et al. teach exposing APCs to heat stress (i.e. hyperthermia) of 44 degrees Celsius for 20 min (see pg. 387 in particular). Furthermore Rees teaches that the heat stressed APCs upregulate MHC-II and are more potent at stimulating T cells (see Fig. 1-3, in particular).

Therefore, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to make a APC cellular vaccine, as taught by Nouri-Shirazi et al. and Fanales-Belasio et al., including the step of exposing the APC to hyperthermia, as taught by Rees. The ordinary artisan at the time the invention was made would have been motivated to include the step of treating with heat stress, since Rees et al. teach that heat stressed APCs are more potent at stimulating T cells, and Fanales-Belasio teaches that T cell stimulatory capacity of APCs can be exploited for tumor immunotherapy.

18. No claim is allowed.

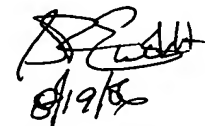
19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy E. Juedes, Ph.D. whose telephone number is 571-272-4471. The examiner can normally be reached on 8am - 5pm, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on 571-272-0841. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1644

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Amy E. Juedes, Ph.D.
Patent Examiner
Technology Center 1600
August 9, 2006

A handwritten signature in black ink, appearing to read "G.R. Ewoldt", with the date "8/9/06" written below it.

G.R. EWOLDT, PH.D.
PRIMARY EXAMINER